

Power to the people

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In rural areas of India, local midwives have a new device to help them deliver babies: a headlamp. The headlamp, which is solar charged, not only makes their work easier but also replaces kerosene lamps, which provide poor light quality and run on costly fuel that emits heat and pollutes the air. To pay for the lamps, midwives can turn to microfinance institutions for small loans.

The matching of the headlamps and micro-loans was the brainchild of Harish Hande, an entrepreneur who is promoting access to electric power for poor rural populations through Selco, his rural sustainable energy company. Mr Hande's strategy is an example of the innovations emerging as companies, multilateral institutions and development groups seek new models through which to deliver power to the world's poorest communities.

Many cash-strapped governments have recognised the role of the private sector in providing access to energy. However, the challenge is to present a business case to investors when the sums needed to spend on infrastructure are high and the tariffs that can be charged to poor communities remain tiny.

Moreover, the developing countries that face power problems also tend to be those with poor governance and weak regulatory regimes, making them a risky bet for a company looking for a secure return on investment.

"One set of requirements for private companies to engage in helping build power infrastructure is how well the basics of the country work – the legal framework, degree of government interference or how well the country follows the rules that are officially on the books," says Bernie Sheahan, director for infrastructure at the International Finance Corporation (IFC), the private sector arm of the World Bank.

"This is the big block that most affects the willingness by companies to engage in power distribution or generation activities," he says.

One new model is that of IFC InfraVentures, an initiative through which the organisation is putting up risk capital and professional expertise to fund early stage project development for infrastructure investments, including power projects (see [Generating appeal](#)).

However, even if companies can reduce risk through such schemes or operate in a stable and well-regulated political environment, there remains the question of financial return when under-investment from the state may mean large injections of cash are needed to build or upgrade generation, transmission and distribution equipment.

At the same time, poor communities may not be able to afford increased tariffs and may therefore resist any price rises. "The problem is that the cost of putting in place the services tends to precede the visible benefits associated with those costs," explains Mr Sheahan. "So, that often leads to public opposition."

While short-term subsidies or grants can help, cross-subsidisation through public-private partnerships is another possibility. In the Philippines, for example, the IFC has been working with government and the private sector to bring power to a cluster of small islands – Romblon, Tablas, Marinduque, Masbate and Basilan.

Three years ago, the Philippine government's Small Power Utilities Grid approached businesses to provide power to the islands on a more consistent basis. Part of the cost of delivering the service is now paid for by cross-subsidy through a universal charge to customers across the country that amounts to a few cents on their electricity bill.

However, an extensive communications initiative was crucial to the project's success. Effective communications meant the islanders accepted the rate rises because they could see that the new system would dramatically improve the reliability of power distribution to their homes and businesses.

"Consumers are now paying more than before. But people understood that the tariff increases, which were 20 to 30 per cent, would give them 24-hour power as opposed to four-hour power," says Mr Sheahan. "So a sound communications strategy and clarity about the benefits are critical and can help governments put in place necessary tariff changes to reflect the cost of new infrastructure."

While organisations such as the World Bank are helping to broker deals between public and private sector energy entities, social entrepreneurs also play a role in spreading access to power in poor countries.

Acumen Fund, a US non-profit venture fund, believes in entrepreneurial approaches to poverty alleviation. While its initial focus was on water and healthcare, Acumen recently began investing in power projects.

"Energy is fascinating because the poor need it just like anything else, but also the poor already spend an inordinate amount of their income on energy," says Rajan Kundra, director of the capital markets and energy portfolio at Acumen.

Recent studies by Acumen show that the world's poorest people spend more than \$400bn (€300bn, £233bn) a year on energy products and services and that a large chunk of their disposable income – some 14 per cent – is spent on energy. "It's a big market," says Mr Kundra. "And they're getting a bad deal. They're spending more for less."

Acumen's approach is to invest in and support energy entrepreneurs. At the end of the second quarter of this year, it had \$2.1m committed to projects that include grid-connected hydroelectric power plants of less than a megawatt in remote areas of Himachal Pradesh in India. Each hydro station is about the size of a garage.

"Physics means the electricity will flow to the nearest point where there is demand," Mr Kundra explains. "And it's big enough for government to build a dedicated line."

Several factors underpin the project's success. First, the state is prepared to build the grid out to these remote areas. Second, a strong government incentive scheme provides the company with a 20-year contract and subsidises the power by buying it from the entrepreneur at a high price and selling it cheaply to local communities.

"It's symbiotic relationship because we don't have an explicit arrangement with the government, but they're buying the electricity from our entrepreneur and providing upfront subsidies," says Mr Kundra. "So it's about knowing what the incentives are and having the certainty of a long-term customer."

As well as multilateral funding and the kind of financing Acumen is providing to energy entrepreneurs, the headlamp project also demonstrates that, when it comes to energy products for the very poor, microfinance can play a role.

"Even a solar lantern at \$20 is unaffordable to the poorest of the poor," says Ellen Morris, managing director and co-founder of Arc Finance, an organisation recently established to broker

new partnerships between energy enterprises and microfinance institutions, which often have little experience of the energy sector. "But if they can get a small loan to buy or even rent it, it creates a new market for energy entrepreneurs in developing countries."

"The biggest need is for technical assistance for both sides to figure out how to design loan products that make sense," she says.

From micro-loans for solar headlamps to multilateral financing for public-private power generation projects, the scale and approach of initiatives being developed to improve access to energy in poor countries varies widely.

However, Mr Kundra believes that all are necessary. "The shortage is so big, that this isn't a single solution market," he says. "You need the World Bank coming in with larger projects while entrepreneurs will fill a lot of the gaps with smaller projects. And if they are successful, those can scale and replicate."

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